Public Meeting on
Notice of Data Availability
MP&M Effluent Limitations Guidelines and Standards

U.S. Environmental Protection Agency

EPA Region 5 Office, Chicago, IL

June 7, 2002, 1:00 PM – 4:00 PM

Agenda

- EPA Presentation 1:00 - 3:00
- Break 3:00 – 3:15
- Q & A Session 3:15 – 4:00

Purpose of Public Meeting

- Present an overview of the Metal Products & Machinery (MP&M) rulemaking and supporting Notice of Data Availability (NODA).
- Assist MP&M stakeholders in their preparation of comments on the NODA.
- Provide updated schedule of rulemaking.
- The meeting is not being transcribed for the record and does not include a pretreatment hearing.

EPA Presentation Outline

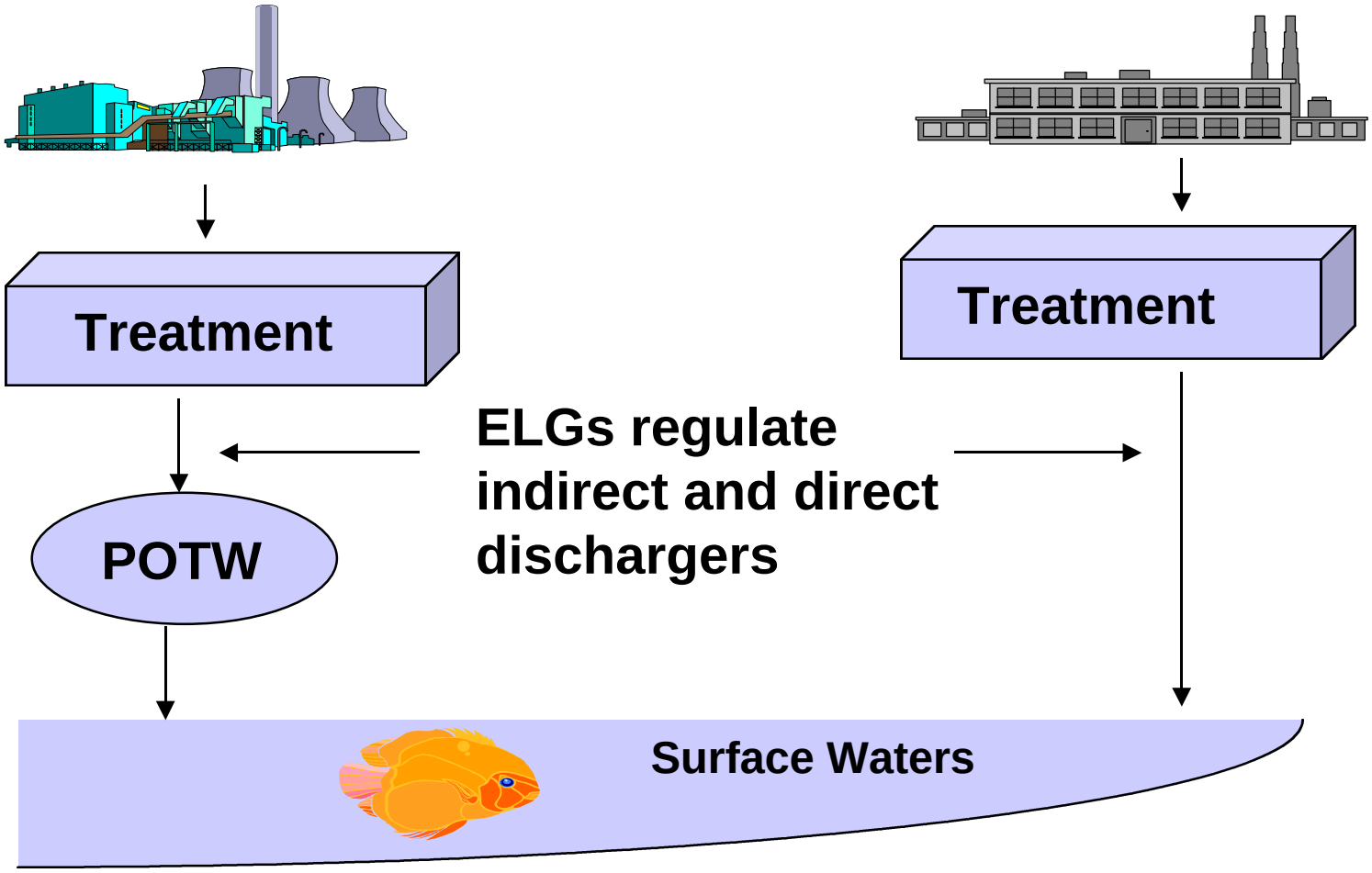
I. Overview of MP&M Rulemaking and NODA
II. Overview of Proposal Comments and Data Acquired Since Proposal
III. Potential Changes from MP&M Proposal
IV. Summary of NODA Analyses Results
V. Next Steps, Rulemaking Schedule, Contact Information

Overview of the MP&M Rulemaking

What are ELGs?

- National industrial wastewater regulations for both direct and indirect dischargers
- Industry Specific (e.g., metal finishing, iron and steel)
- Numerical, technology performance-based limitations (specific technology not required)
- Economically Achievable
- ELGs are incorporated into NPDES permits (direct dischargers) or into controls set by POTWs (indirect dischargers)

What are ELGs?



What are Categorical Pretreatment Standards?

- ELGs on industrial indirect dischargers designed to prevent the discharge of pollutants that pass through, interfere with, or are otherwise incompatible with the operation of publicly owned treatment works (POTW).

- Categorical pretreatment standards are technology performance-based limitations that are economically achievable (not based on site specific parameters).

- General Pretreatment Regulations (40 CFR 403) set the framework for the implementation of categorical pretreatment standards.

Summary of Metals Industry Effluent Guidelines

Coverage Area	Title	CFR Citation
Metal and Metal Alloy Manufacturing	Iron and Steel Manufacturing †	40 CFR 420
	Nonferrous Metals Manufacturing	40 CFR 421
	Ferroalloy Manufacturing	40 CFR 424
Metal Forming	Iron and Steel Manufacturing †	40 CFR 420
	Metal Molding and Casting	40 CFR 464
	Aluminum Forming	40 CFR 467
	Copper Forming	40 CFR 468
	Nonferrous Metals Forming and Metal Powders	40 CFR 471
Component Finishing	Electroplating	40 CFR 413
	Iron and Steel Manufacturing †	40 CFR 420
	Metal Finishing	40 CFR 433
	Battery Manufacturing	40 CFR 461
	Coil Coating	40 CFR 465
	Porcelain Enameling	40 CFR 466
	Electrical and Electronic Component Manufacturing	40 CFR 469

† The Iron and Steel Manufacturing category includes metal manufacturing, metal forming, and component finishing.

How Does EPA Develop ELGs?

- National cost and pollutant reduction estimates based on:
  - EPA questionnaires sent to Industry and POTWs
  - EPA and Industry-supplied wastewater sampling data
  - EPA economic and engineering modeling
- Mass-based (mg-pollutant/square meter production) or concentration-based limitations (mg/L).
- EPA estimates the economic impacts and benefits associated with the ELGs.

How Does EPA Develop ELGs?

ELGs economic impact analyses include the following:

- Closure Analysis
- Regulatory Flexibility Analysis
- Community Impact Analysis
- Foreign Trade Impacts
- Firm Level Impacts
- Barrier to Entry Analysis (New Sources)
- Cost-effectiveness Analysis ($/pound-equivalent removed)

What is the Scope of the MP&M Industry?

- EPA estimates that there are 60,000 water discharging facilities that discharge wastewater from manufacturing, maintaining, and rebuilding metal parts, products or machines in 18 industrial sectors (including Federal, state and municipal government sites).

- The MP&M proposal includes approximately 10,000+ of these 60,000 facilities.

- Initially, EPA divided the industry sector into two phases for the MP&M rulemaking. EPA issued the Phase I proposal on May 30, 1995.

- Based on Phase I comments, EPA issued a new proposal on January 3, 2001 which covers the entire industry sector in one rulemaking.

MP&M Industry Sectors

MP&M Phase I	MP&M Phase II
Aerospace	Bus and Truck
Aircraft	Household Equipment
Electronic Equipment	Instruments
Hardware	Motor Vehicles
Mobile Industrial Equipment	Office Machines
Ordnance	Railroad
Stationary Industrial Equipment	Ships and Boats
	Precious Metals and Jewelry
	Job Shops
	Printed Wiring Boards

MP&M Regulatory Subcategories

These subcategories cover facilities that primarily discharge metal-bearing wastewaters.

MP&M Subcategory	General Description
General Metals	Facilities that perform manufacturing or heavy rebuilding of metal parts, products and machines and/or captive metal finishing facilities (e.g., manufacturers of aircraft, ships, hardware, industrial/commercial equipment).
Metal Finishing Job Shops	Facilities that perform 5 core metal finishing operations (e.g., electroplating, electroless plating, chemical etching) AND operate as a job shop (own < 50% of products).
Printed Wiring Board	Facilities that manufacture, maintain, or repair printed wiring boards (printed circuit boards) including job shops.
Steel Forming & Finishing	Facilities that perform MP&M operations and/or cold forming on steel wire, rod, bar, pipe or tube.
Non-Chromium Anodizing	Facilities that perform aluminum anodizing without using chromic acid or dichromate sealants.

MP&M Regulatory Subcategories

These subcategories cover facilities that primarily discharge oil-bearing wastewaters.

MP&M Subcategory	General Description
Oily Wastes	Facilities that perform only “oily operations.” Mostly repair and maintenance facilities.
Railroad Line Maintenance	Facilities that perform routine cleaning and light maintenance on railroad engines or similar parts or machines.
Shipbuilding Dry Dock	Covers process wastewater generated by maintaining, repairing, rebuilding, final assembly or launching of ships from shipbuilding dry docks and similar structures.

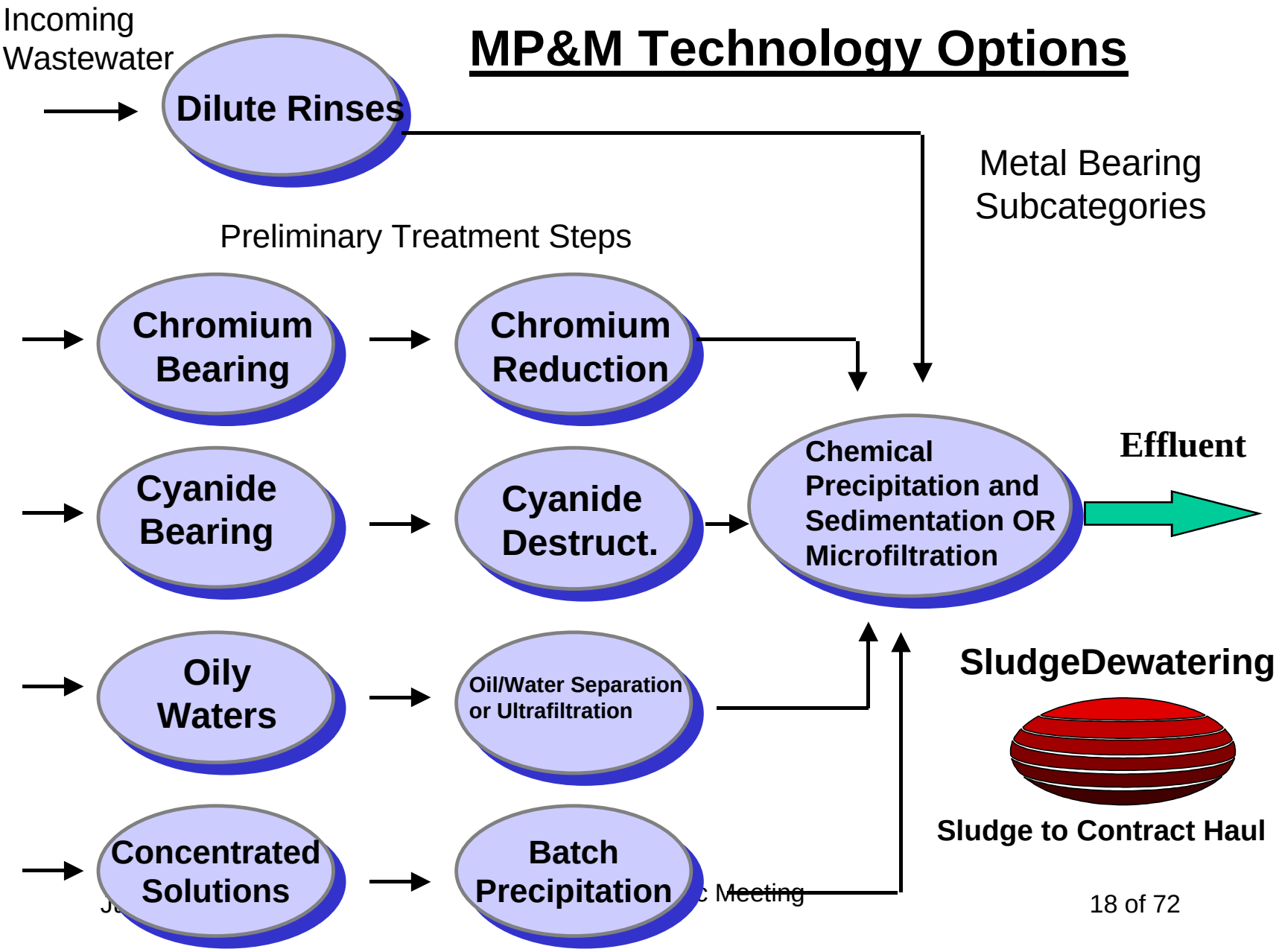
MP&M Regulatory Subcategories

MP&M Subcategory	Covered by Previous Regulation?
General Metals	Some sites by Parts 413/433
Metal Finishing Job Shops	All sites (1984) by Parts 413/433
Printed Wiring Board	All sites (1984) by Parts 413/433
Steel Forming & Finishing	All sites (1982/2002) by Part 420
Non-Chromium Anodizing	All sites (1984) by Parts 413/433
Oily Wastes	None.
Railroad Line Maintenance	None.
Shipbuilding Dry Dock	None.

Purpose of MP&M ELGs

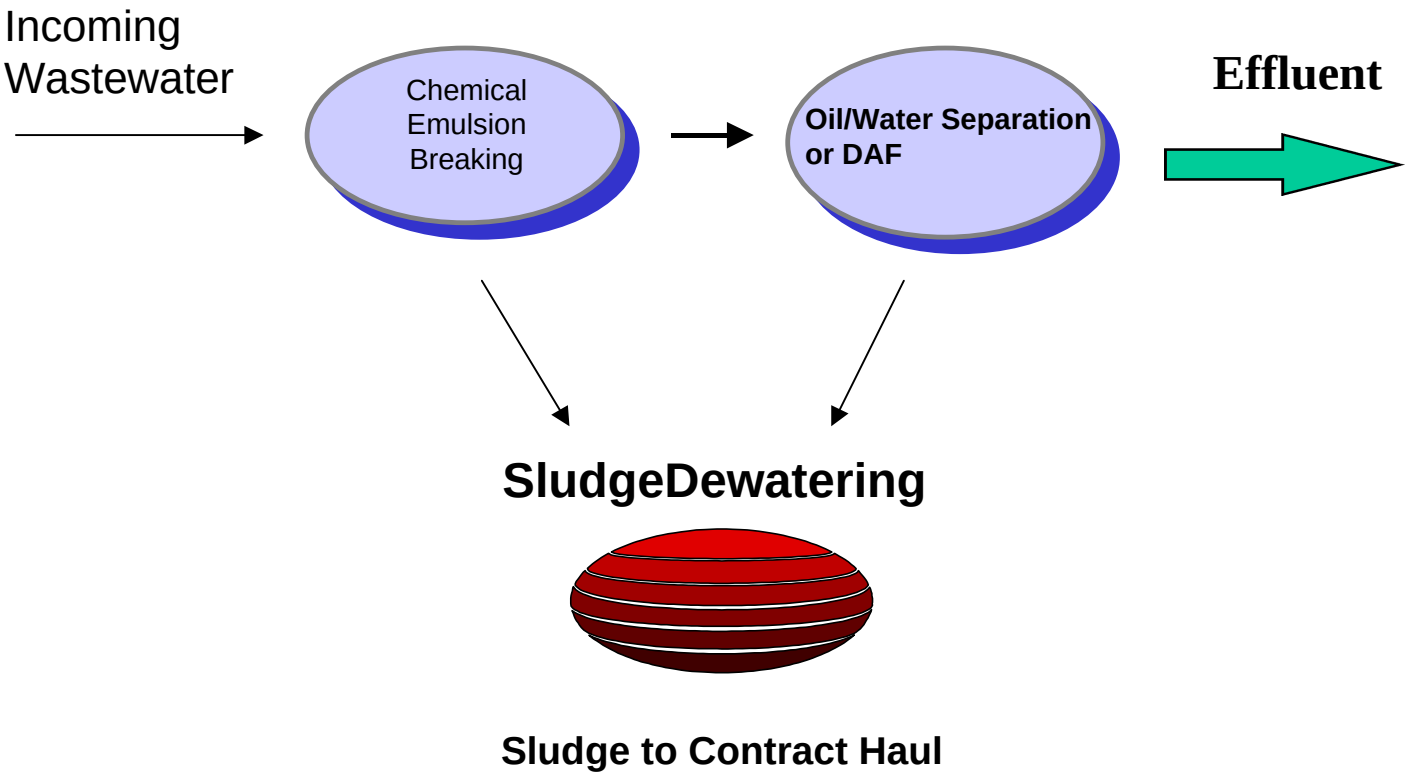
- Cover sites not currently covered by previous metals ELGs.
- Update 20 year old regulations (40 CFR 413 and 433) to reflect changes in process control and pollution prevention practices
- Develop Implementable Rule
  - Current 413/433 rules are ambiguous for certain operations
  - Inconsistent interpretation of “new source” definition
- Reduce Metals in POTW Sludge

MP&M Technology Options



MP&M Technology Options

Oil-Bearing Wastewater Subcategories



MP&M Pollution Prevention Technology

- EPA included pollution prevention (P2) technologies in addition to “end-of-pipe” treatment technologies.

- Types of In-process P2 technologies include:
  - Centrifugation & reuse for lubricants and coolants
  - Countercurrent cascade rinsing
  - Flow reduction for rinses and baths

What is the MP&M NODA?

The Notice of Data Availability (NODA) was published on June 5, 2002. The NODA reviews all post-proposal activities and presents EPA's current thinking (but does not make any decisions). The NODA includes seven main components:

(1) discussion of new analytical data and information;

(2) possible revisions to EPA's costs and pollutant loading model and methodologies that incorporate new data;

(3) possible changes to the applicability of the rule, definitions, and selection of regulated pollutants for the final rule as a result of the new information;

What is the MP&M NODA?

…NODA includes (cont.)

(4) new information and revisions that EPA may use for its economic and benefit methodologies;

(5) new information and revisions that EPA may use for its statistical methodologies;

(6) revised estimates of costs, loadings, economic impacts, benefits, and numerical limitations and standards; and

(7) discussion of possible alternative options based on new data and information.

Overview of the Jan. ‘01 Proposal Comments and Data Acquired Since Jan. ‘01 Proposal

MP&M Jan. ’01 Proposal Comments

- EPA received 1,500+ comments on the January 2001 proposal
- Pollutant removals overestimated
  - Model loadings should be subcategory specific
  - Correct model for errors
  - Give more credit for existing treatment
- Economic impacts underestimated
  - Reduce cost pass-through
  - Re-evaluate facility closure tests
  - Re-evaluate criteria for moderate impacts
  - Review cash flow estimates

MP&M Jan. ’01 Proposal Comments

- Costs underestimated – Limits consistently unattainable without more advanced equipment
- POTW administrative costs underestimated
- Benefits overestimated
- Pollution prevention alternative supported
- No further regulation for Metal Finishing industry is necessary
- Add certain operations to Oily Wastes from General Metals Subcategory

MP&M Jan. ’01 Proposal Comments

- EPA will respond to all comments received on the Phase I, January 2001 proposal, and NODA by December 2002

- Total Comments Received to Date: 1,800+

MP&M NODA Data

- EPA is including new analytical wastewater sampling data to recalculate pollutant reductions, costs, economic impacts, benefits, and limits.
  - More than 70 sets of data from industry
  - Seven new EPA sampling episodes
- EPA has released some data previously held as confidential
- EPA examined different analytical methods for Total Sulfide
- EPA is noticing for public comment surveys from AMSA, Association of American Railroads, and North Carolina Pretreatment Consortium

MP&M NODA Data – EPA Data

- Commentors raised concerns over EPA's database with respect to metal finishing "zinc" platers, printed wiring board facilities, and the steel forming and finishing facilities.

- EPA visited 6 metal finishing zinc platers (4 job shops, 2 captive), 8 printed wiring board facilities, 4 steel forming and finishing facilities, and 2 other MP&M facilities (i.e., metal finishing job shops that do not specialize in zinc plating).

- EPA performed wastewater sampling at 2 metal finishing zinc platers that operate as job shops, 3 printed wiring board facilities, and 2 steel forming and finishing facilities.

MP&M NODA Data – Total Sulfide

- EPA solicited comment in the proposal on the appropriate analytical method for analyzing total sulfide in wastewater from MP&M facilities.

- EPA used three three different analytical methods to detect total sulfide (Method 376.1, Method 376.2, Method 4500-S-2 (E)). All three of these methods are currently approved at 40 CFR part 136 for compliance monitoring.

- EPA conducted a study of these three methods and the results are in the NODA and supporting record.

MP&M NODA Data – Total Sulfide

- Of the 26 effluent samples where EPA detected sulfide by one or more of the three methods, eight samples were detected by all three methods.

- These results indicate that the performance of the three methods can be comparable in the sample type to which these methods are most often applied (i.e., treated effluents), and in samples whose sulfide concentrations fall within the range of all three methods.

- The data from the other effluent samples and from the influents and unit process samples suggest that: (1) Method 376.2 may perform better than SM 4500-S-2 (E); and (2) when the sample pretreatment procedure in SM 4500-S-2 [C] is employed, SM 4500-S-2 (E), in turn, may perform better than Method 376.1.

MP&M NODA Data – Industry Data

- In addition to their written comments, many MP&M facilities and a few POTWs submitted data to be used in developing the numerical limits for the final rule.

- EPA has been able to include75 data sets (from the 136 submitted with proposal comments) and include them in calculating the preliminary revised limitations and standards.

- In addition, EPA is using characterization data for 10 MP&M unit operations (i.e., in-plant raw wastewater) and rinses from three facilities.

MP&M NODA Data – Industry Data

- EPA is including long-term monitoring data (i.e., data used for compliance monitoring) from:
  - 31 General Metals facilities,
  - 1 Metal Finishing Job Shop,
  - 4 Zinc Platers,
  - 2 Printed Wiring Boards,
  - 3 SFF facilities,
  - 3 Oily Wastes facilities, and
  - 2 Shipbuilding Dry Docks.

- EPA is also including industry-submitted paired influent/effluent data from 26 General Metals facilities, 8 Metal Finishing Job Shops, 2 Zinc Platers, and one Oily Wastes facility.

MP&M NODA Data – Industry Data

- EPA received data from the American Association of Railroads (AAR) which summarized the current permit limits, treatment-in-place (TIP), and the facilities' measured monthly average and average of daily maximum values for the last year for all known direct discharge railroad line maintenance facilities.

- Commenters stated that EPA underestimated the administration costs to POTWs to implement this rule. To support their statements, AMSA and the North Carolina Pretreatment Consortium conducted their own surveys.

- EPA will use the results from all three surveys to refine its analysis of costs, loads, benefits, economic impacts, and POTW administrative costs for the final rule.

Potential Changes from MP&M Proposal

Potential Changes from MP&M Proposal

- Preliminary revised limitations and standards based on new data and revisions to statistical methodology.

- Considering separate subcategory or segment for Zinc Platers. EPA may keep the proposed subcategories and just use new zinc limit that Zinc Platers can meet for General Metals and Metal Finishing Job Shop subcategories.

- Considering adding operations to definition of “oily operations”. This will move many facilities from General Metals subcategory (metal bearing) to the Oily Wastes subcategory (oil-bearing).

Potential Changes from MP&M Proposal

- Considering setting new source standards equal to existing source limits (i.e., no longer base new source option on chemical precipitation + microfilter)

- Considering use of an Environmental Management System (plus meeting Part 433) for the General Metals subcategory as an alternative to meeting the MP&M limits as suggested by industry.

- Considering not regulating sulfide, molybdenum, and some other pollutants for the metal-bearing subcategories in the final MP&M rule

Potential Changes from MP&M Proposal

EPA is considering use of:

- flow cutoff (or increasing proposed flow cutoff);
- pollution prevention alternatives;
- upgrading limits for all sites covered by Part 413 (Electroplating) to those in Part 433 (Metal Finishing);
- applying Part 433 limits to General Metals facilities w/o national categorical standards; and
- no regulation/no further regulation for indirect dischargers in several subcategories.

Potential Changes from MP&M Proposal

Changes to the economic impact methodologies include:

- using sector-specific thresholds to evaluate moderate impacts;
- using a single net present value test to assess the potential for closures;
- calculating baseline capital outlays to be reflected in cash flow;
- updating survey data using sector-specific price indices;
- adjusting labor costs for facilities that report abnormally high labor costs; and
- limiting post-compliance tax shields to no greater than reported baseline taxes.

Potential Changes from MP&M Proposal

Changes to the benefits methodologies include:

- revising the analysis of neurological effects in preschool age children from exposure to lead based on new data and health scientists recommendations;

- including carcinogenic effects of lead in the analysis;

- including both single- and multiple-day trips in calculating benefits from water quality improvements to recreational users;

- revising the Ohio case study analysis based on peer reviewers' recommendations;

Potential Changes from MP&M Proposal

Changes to the method for extrapolating sample-based results to the national level include:

- post-stratification of the MP&M sample to reflect benefit pathway characteristics such as water body type and size;

- developing an alternative estimate of the monetary value of national benefits based on extrapolation of the Ohio case study results;

MP&M Costs & Loadings Model

- EPA is also considering the following changes for the subcategorization of facilities and unit operations data for the final rule:
  - Placing Printed Wiring Board facilities and Printed Wiring Board job shops in the same subcategory
  - Placing Printed Wiring Assembly facilities in the General Metals Subcategory
  - Subcategorizing Unit Operation Data
  - Dividing the testing unit operation by by industry sector or testing type (e.g., hydrostatic, dye penetrant, ultrasonic, magnetic flux)

MP&M Costs & Loadings Model

- EPA received comment on several pollutant-specific issues related to the pollutant loadings and removals generated by EPA's Cost & Loadings Model.

- Cyanide: EPA re-classified a sampling point from electroplating with cyanide rinse unit operation (UP23R) to drag-out rinse (UP23RDO) which is recycled.

- Tin: EPA re-classified a sampling point from UP4R (acid treatment without chromium rinse) to a new unit operation electroless plating catalyst solutions (UP87).

- Copper: The previous two changes affected other metals concentrations including copper.

MP&M Costs & Loadings Model

- Boron: EPA has concluded that, in most cases at MP&M facilities, boron is in the dissolved anionic form (as borate) and cannot be removed by chemical precipitation. EPA intends to conduct further review of boron removals in other treatment systems, such as Dissolved Air Flotation (DAF).

- For the NODA EPA revised several parts of the computer format of the model and data entry corrections (affecting approximately 5% of the stream codes).

- Treatment-In-Place (TIP) credit: The two most prominent issues received in comments regarding TIP credit dealt with giving TIP credit for alternative technologies, including ultrafiltration, and with EPA's methodology for calculating the baseline load for currently regulated facilities.

MP&M Costs & Loadings Model

- Wastestream-specific flow and production is used in the Costs & Loadings Model
  - Data were not always available, so values for individual stream flows were imputed for the proposal and NODA
  - NODA database included possible revisions to the stream flows and total flows from the proposal values
  - For the NODA, imputed values of stream flows were revised downward if the sum of the stream flows was greater than the total discharge flow
  - EPA solicits comments on these additional revisions (e.g., treatment of dry operations, other available information) for the final rule

MP&M Costs & Loadings Model

- EPA performed a sensitivity analysis on the baseline pollutant loadings ("Baseline 413/433 Analysis"). EPA assumed for this sensitivity analysis that all sites currently regulated by part 413 and/or part 433 meet their existing limits at the point of compliance regardless of the treatment they have in place.

- EPA also received comment regarding facilities with low concentration raw wastewater characteristics that do not have treatment-in-place (TIP) for some or all of the their wastewater. In the "low concentration" sensitivity analysis, EPA substituted the Part 413 or Part 433 monthly average limitations, as appropriate, for unit operation concentrations found in the Cost & Loadings Model for facilities with no treatment in-place.

MP&M Costs & Loadings Model

- EPA has included explicit costs for increased analytical monitoring, incorporated the revised long-term average concentrations, and made several minor corrections to various cost modules.

- EPA is also considering the addition of a sand filter to the BAT technology option.

- EPA has revised the survey weights used to generate national estimates for some Phase I sites used in the Cost & Loadings Model and is considering using these for the final rule.

MP&M Limitations and Standards

- For the NODA, EPA calculated revised limitations and standards:
  - Based upon an updated database that included the new data sets
  - Incorporated minor revisions to the statistical methodology
  - Revised values were sometimes less than the proposed values

- NODA presents *preliminary revised* daily maximum limitations and standards which are the greater (less stringent) of the proposed value and the revised value. EPA solicits comments on this approach

MP&M Limitations & Standards(cont.)

- EPA received many comments on the achievability of the proposed limitations and standards.

- Section VI.A of the NODA presents EPA's analyses of achievability of the preliminary revised limitations and standards:
  - Majority of the evaluated data have values less than the preliminary revised limitations and standards
  - Other factors did not appear to influence values of option long-term averages (e.g., influent levels, pH)

- EPA intends additional engineering and statistical review before the final rule

MP&M Limitations & Standards(cont.)

- EPA solicits comment on whether Total Organic Parameter (TOP) limitations are necessary in the final rule considering that:
  - Other approaches were proposed for reducing organic pollutant discharges:
    - Limitation for total organic carbon (TOC) which may be more cost-effective than TOP monitoring
    - Development and certification of an organics management plan
  - TOP may not adequate characterize the discharges of organic pollutants for all subcategories and facilities

MP&M Limitations & Standards(cont.)

- NODA Section VI.C describes the consistency of the MP&M statistical methodology with other recent effluent guidelines:
  - EPA is considering some changes for consistency and because they appear to be appropriate for the MP&M industry
  - The section includes documentation of its treatment of data from:
    - Continuous and batch systems
    - Different episodes at a facility
    - Data editing
    - Data transfers within the MP&M industry and BPT limitations from the Metal Finishing industry

413 to 433 Upgrade Option

- Currently, the only facilities that are still completely covered by the Electroplating ELGs (Part 413) are indirect discharging facilities that were in existence prior to 1982 and have not significantly upgraded their operations.

- If a facility modified its operations significantly, this would trigger new source standards and the facility would be subject to the Metal Finishing ELGs (Part 433), which are more stringent than the Electroplating ELGs.

- In the 413 to 433 Upgrade Option, EPA would set limits for all facilities in the General Metals Subcategory that are currently regulated under part 413 equivalent to those in the Metal Finishing ELGs (40 CFR part 433).

Summary of NODA Analyses Results

General Metals Subcategory

MP&M General Metals Sites Direct Dischargers								
Options	Number of Sites	Annualized Cost ($1999) (millions)	Annual Pounds Removed (lbs)			Annual Pound-Equivalents (lbs-eq) Removed	Cost and Removal Comparison ($/lb COD)	Economic Impacts (Closures) With All NODA Changes
			O&G (As HEM/SGT-HEM) + TSS	COD	Priority and Non-conventional Organics and Metals			
Option 2 /NODA	1,500	381	5,766,753	72,120,176	5,688,741	996,741	5.28	20
Opt 2 / Proposal	3,794	248	18,031,000	180,792,000	10,460,000	1,559,000	1.37	

MP&M General Metals Sites > 1 MGY Indirect Dischargers						
Options	Number of Sites	Annualized Cost ($1999) (millions)	Annual Pound-Equivalents (lbs-eq) Removed	Cost Effectiveness* (1981$/lb-eq)	Economic Impacts (Closures) With All NODA Changes	Removals/ Facility/Yr (lbeq./facility/yr)
Option 2/ NODA	2,055	636	1,240,219	440	91	604
Option 2 / Proposal	3,055	1,698	7,041,000	136		2305

Cost-effectiveness calculations do not include costs and loads from baseline closures.

Metal Finishing Job Shop Subcategory

MP&M Metal Finishing Job Shop Sites Direct Dischargers								
Options	Number of Sites	Annualized Cost ($1999) (millions)	Annual Pounds Removed (lbs)			Annual Pound-Equivalents (lbs-eq) Removed	Cost and Removal Comparison ($/lb COD)	Economic Impacts (Closures) With All NODA Changes
			O&G (As HEM/SGT-HEM) + TSS	COD	Priority and Non-conventional Organics and Metals			
Option 2/ NODA	24	4.13	15,492	394,554	35,661	1,652	10.46	12
Option 2 / Proposal	15	1.40	30,228	232,000	45,834	16,605	6.03	

MP&M Metal Finishing Job Shop Sites Indirect Dischargers						
Options	Number of Sites	Annualized Cost ($1999) (millions)	Annual Pound-Equivalents (lbs-eq) Removed	Cost Effectiveness* (1981$/lb-eq)	Economic Impacts (Closures) With All NODA Changes	Removals/ Facility/Yr (lbeq./facility/yr)
Option 2/ NODA	1,165	151	93,190	703	508	80
Option 2 / Proposal	1,514	192	1,756,000	39		1160

Cost-effectiveness calculations do not include costs and loads from baseline closures.

Printed Wiring Board Subcategory

MP&M Printed Wiring Board Sites Direct Dischargers								
Options	Number of Sites	Annualized Cost ($1999) (millions)	Annual Pounds Removed (lbs)			Annual Pound-Equivalents (lbs-eq) Removed	Cost and Removal Comparison ($/lb COD)	Economic Impacts (Closures) With All NODA
			O&G (As HEM/SGT-HEM) + TSS	COD	Priority and Non-conventional Organics and Metals			
Option 2/ NODA	4	0.31	530	12,009	1,078	186	25.87	0
Option 2 / Proposal	11	2.67	318,000	1,340,000	223,000	64,573	1.99	

MP&M Printed Wiring Board Sites Indirect Dischargers						
Options	Number of Sites	Annualized Cost ($1999) (millions)	Annual Pound-Equivalents (lbs-eq) Removed	Cost Effectiveness* (1981$/lb-eq)	Economic Impacts (Closures) With All NODA Changes	Removals/ Facility/Yr (lbeq./facility/yr)
Option 2/ NODA	840	175	153,653	549	55	183
Option 2 / Proposal	621	159	1,181,000	68		1902

Cost-effectiveness calculations do not include costs and loads from baseline closures.

Steel Forming & Finishing Subcategory

MP&M Steel Forming & Finishing Sites Direct Dischargers								
Options	Number of Sites	Annualized Cost ($1999) (millions)	Annual Pounds Removed (lbs)			Annual Pound-Equivalents (lbs-eq) Removed	Cost and Removal Comparison ($/lb O&G +TSS))	Economic Impacts (Closures) With All NODA Changes
			O&G (As HEM/SGT-HEM) + TSS	COD	Priority and Non-conventional Organics and Metals			
Option 2/ NODA	41	26.7	938,339	326,439	742,472	119,632	28.46	7
Option 2 / Proposal	43	31.6	892,000	4,530,000	470,000	339,000		

MP&M Steel Forming & Finishing Sites Indirect Dischargers						
Options	Number of Sites	Annualized Cost ($1999) (millions)	Annual Pound-Equivalents (lbs-eq) Removed	Cost Effectiveness* (1981$/lb-eq)	Economic Impacts (Closures) With All NODA Changes	Removals/ Facility/Yr (lbeq./facility/yr)
Option 2/ NODA	112	22.1	61,015	153	10	545
Option 2 / Proposal	110	25.6	172,000	68		1,564

Cost-effectiveness calculations do not include costs and loads from baseline closures.

Non-Chromium Anodizers Subcategory

Non-Chromium Anodizers Direct Discharging Sites								
Options	Number of Sites	Annualized Cost ($1999) (millions)	Annual Pounds Removed (lbs)			Annual Pound-Equivalents (lbs-eq) Removed	Cost and Removal Comparison ($/lb O&G+TSS)	Economic Impacts (Closures) With All NODA Changes
			O&G (As HEM/SGT-HEM) + TSS	COD	Priority and Non-conventional Organics and Metals			
Option 2 /NODA	35	33.78	4,215,897	95,400,842	37,401,639	2,392,735	8.01	0
Option 2 / Proposal	NA							

Oily Waste Subcategory

MP&M Oily Wastes Sites Direct Dischargers								
Options	Number of Sites	Annualized Cost ($1999) (millions)	Annual Pounds Removed (lbs)			Annual Pound-Equivalents (lbs-eq) Removed	Cost Reasonable-ness ($/lb COD)	Economic Impacts (Closures) With All NODA Changes
			O&G (As HEM/SGT-HEM) + TSS	COD	Priority and Non-conventional Organics and Metals			
Option 6 /NODA	2,749	32.36	5,517,909	11,801,886	108,748	5,367	2.74	0
Opt 6 / Proposal	911	12.03	1,234,000	5,128,000	212,000	16,070	2.35	

MP&M Oily Wastes Sites > 2 MGY Indirect Dischargers						
Options	Number of Sites	Annualized Cost ($1999) (millions)	Annual Pound-Equivalents (lbs-eq) Removed	Cost Effectiveness* (1981$/lb-eq)	Economic Impacts (Closures) With All NODA Changes	Removals/ Facility/Yr (lbeq./facility/yr)
Option 6/ NODA	288	85	14,385	3,548	0	50
Option 6 / Proposal	226	11	77,029	178		341

Cost-effectiveness calculations do not include costs and loads from baseline closures.

Railroad Line Maintenance Subcategory

MP&M Railroad Line Maintenance Sites Direct Dischargers								
Options	Number of Sites	Annualized Cost ($1999) (millions)	Annual Pounds Removed (lbs)			Annual Pound-Equivalents (lbs-eq) Removed	Cost and Removal Comparison ($/lb COD)	Economic Impacts (Closures) With All NODA Changes
			O&G (As HEM/SGT-HEM) + TSS	COD	Priority and Non-conventional Organics and Metals			
Option 10 /NODA	31	0.60	4,857	43,797	482	34	13.79	0
Option 10 / Proposal	34	1.28	56,000	59,000	1,747	174	21.69	

Shipbuilding Dry Dock Subcategory

MP&M Shipbuilding Dry Dock Sites Direct Dischargers								
Options	Number of Sites	Annualized Cost ($1999) (millions)	Annual Pounds Removed (lbs)			Annual Pound-Equivalents (lbs-eq) Removed	Cost and Removal Comparison ($/lb O&G+TSS)	Economic Impacts (Closures) With All NODA Changes
			O&G (As HEM/SGT-HEM) + TSS	COD	Priority and Non-conventional Organics and Metals			
Option 10 /NODA	6	2.86	8,488,793	115,420	1,796	56	0.34	0
Option 10 / Proposal	6	2.31	8,451,000	0	2,157	111	0.27	

NODA Analyses Results

Incremental Closures and Moderate Impacts by Subcategory			
Subcategory	**Total Operating in Baseline**	**Incremental Closures**	**Incremental Moderate Impacts**
General Metals	11,435	111	151
Metal Finishing Job Shops	1,139	520	36
Non-Chromium Anodizing	148	0	0
Printed Wiring Board	605	55	56
Steel Forming & Finishing	148	17	17
Oily Wastes	46,286	1	0
Railroad Line Maintenance	832	0	0
Shipbuilding Dry Dock	9	0	0
Zinc Platers	435	93	0
All Categories	61,036	797	260

NODA Analysis Results

Cost-Effectiveness for Indirect Dischargers by Subcategory			
Subcategory	**Incremental Before-Tax Compliance Cost (million $1981)**	**Incremental Removals (lbs-eq)**	**Cost-Effectiveness Ratio ($1981/lb-eq)**
General Metals	300.56	683,305	440
Metal Finishing Job Shops	45.14	64,199	703
Non-Chromium Anodizing	--	--	--
Oily Wastes	50.58	8,989	3,548
Printed Wiring Boards	76.08	138,458	549
Railroad Line Maintenance	--	--	--
Shipbuilding Dry Dock	--	--	--
Steel Forming & Finishing	9.69	63,368	153
Zinc Platers	38.13	97,304	392
All Indirect Dischargers	520.18	1,055,623	493

NODA Analysis Results

Estimated Benefits from Reduced MP&M Discharges (Annual Benefits - Million $ 1999)		
Benefit Category	**NODA Option (Changes to Technical Inputs Only)**	**NODA Option With all Changes in Today's Document**
1. Reduced Cancer Risk:		
Fish Consumption	$2.10	$2.96
Water Consumption	$1.34	$18.00
2. Reduced Risk from Exposure to Lead:		
Children	$6.85	$39.66
Adults	$6.73	$7.67
3. Avoided Sewage Sludge Disposal Costs	$7.68	$5.59
4. Enhanced Fishing	$328.33	$346.11
5. Enhanced Boating	Not Estimated	To Be Estimated
6. Enhanced Viewing	Not Estimated	To Be Estimated
7. Nonuse benefits (½ of Recreational Use Benefits)	Not Estimated	To Be estimated
Total Monetized Benefits	Not Estimated	To Be estimated

413 to 433 Upgrade Option

- General Metals Subcategory
  - 286 indirect General Metals facilities currently covered only by the Electroplating ELGs (Part 413)
  - Total annual compliance cost of $7.2 million (1999$)
  - 18 baseline closures and 31 regulatory closures
  - Annual reduction in pollutants discharged to POTWs of approximately 35,000 pound-equivalents (approximately 148 PE-removed/facility-year).
  - Cost-effectiveness number of $120/pound-equivalent removed (1981$).

413 to 433 Upgrade Option

- Metal Finishing Job Shop Subcategory
  - 278 indirect Metal Finishing Job Shop facilities currently covered only by the Electroplating ELGs (Part 413)
  - Total annual compliance cost of $1.4 million (1999$)
  - No baseline closures and 24 regulatory closures
  - Annual reduction in pollutants discharged to POTWs of approximately 35,000 pound-equivalents (approximately 138 PE-removed/facility-year).
  - Cost-effectiveness number of $23/pound-equivalent removed (1981$).

413 to 433 Upgrade Option

- Printed Wiring Board Subcategory
  - 354 indirect PWB facilities currently covered only by the Electroplating ELGs (Part 413)
  - Total annual compliance cost of $0.33 million (1999$)
  - Three baseline closures and 18 regulatory closures
  - Annual reduction in pollutants discharged to POTWs of approximately 40,000 pound-equivalents (approximately 105 PE-removed/facility-year).
  - Cost-effectiveness number of $6/pound-equivalent removed (1981$).

Next Steps, Rulemaking Schedule, Contact Information

MP&M Next Steps

- EPA is soliciting data and comments on the NODA
- EPA will analyze the additional information and prepare final options for internal Agency deliberations
- EPA will review Agency options with other Federal Agencies
- EPA will sign and publish final MP&M rule in the Federal Register (www.gpo.gov)

Rulemaking Schedule

- Phase I Proposed: May 1995
- Combined Phase I & II Rule Proposed: January 3, 2001
- 180-day Comment Period Closed: July 3, 2001
- Publication of Notice of Data Availability (NODA): June 5, 2002
- Public Meeting on NODA in Chicago: June 7, 2002
- 45-day NODA Comment Period: July 22, 2002
- Court-Ordered Signature of Final Action: December 31, 2002

How to Submit Comments

See introduction to MP&M NODA for full instructions.

Public comments regarding this document should be submitted electronically to: mpm.comments@epa.gov.

Please submit an original and three copies of any hardcopy comments and enclosures as well as any references cited in your comments.

U.S Postal Service	Express Mail
Metal Products & Machinery Rule U.S. EPA, Office of Water Engineering and Analysis Division (4303T), 1200 Pennsylvania Avenue, NW, Washington, DC 20460	Metal Products & Machinery Rule U.S. EPA, Office of Water 1201 Constitution Ave, NW Room 6231G EPA WEST Washington, DC 20004.

For More Information…

Further updates on the MP&M effluent guidelines, including electronic copies of EPA supporting analyses and Federal Register notices, can be found at:

http://www.epa.gov/waterscience/guide/mpm/

MP&M contacts are:

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For More Information…

- The public record for the MP&M rulemaking is available for review in the EPA Water Docket, Room EB57, 401 M St., SW, Washington, DC, 20460 (Docket No. W-99-23).

- The docket includes all references cited, but does not include any information claimed as Confidential Business Information (CBI).

- The record is available for inspection from 9:00 AM to 4:00 PM, Monday through Friday, excluding Federal holidays:
  - For access to docket materials, please call (202) 260 3027 to schedule an appointment; and
  - A reasonable fee may be charged for copying.

- A copy of the docket index will be posted on the MP&M Webpage (see previous slide for URL).